

fibers l  
surface

1. A material comprising:

a nonwoven web comprising a plurality of substantially continuous fibers having a z-direction orientation and forming a plurality of ridges on both surfaces of the nonwoven web.

2. The ~~lofty~~ material of claim 1 further comprising:

the nonwoven web being a lofted web with x, y and z dimensions, with x being the machine direction, y being the cross machine direction and z being the loft direction:

first and second major surfaces in x-y planes and spaced apart in the z direction;

the continuous fibers being folded to form loops extending in the z direction and the loops combining to form a material with a succession of waves spaced along the machine direction, each wave running in the cross machine direction.

3. The material according to Claim 2 further including each wave having at least one of its leading or trailing edges bonded to an adjacent leading or trailing edge to thereby hold its z-direction shape.

4. The material according to Claim 3 wherein the leading and trailing edges of one wave are bonded together.

5. The material according to Claim 3 wherein the leading and trailing edges of one wave are bonded together and bonded to the trailing and leading edges of the adjacent waves, respectively.

6. The material according to Claim 2 further including each wave being substantially elliptically shaped in cross section between the major surfaces.

7. The material according to Claim 2 further including: the waves are oriented off the orthogonal z- axis and are unidirectional.

8. The material according to Claim 2 further including: the waves are oriented off the orthogonal z- axis and are multi-directional.

9. The material according to Claim 2 further including: the first major surface being preponderantly closed.

10. The material according to Claim 2 further including: the second major surface being preponderantly closed.

11. The material according to Claim 2 further including: the waves being randomly spaced in the machine direction.

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14. The material according to Claim 2 further including: the waves being regular length in the cross machine direction.

15. The material according to Claim 14 wherein: the waves extend from edge to edge in the cross machine direction.

16. A material in accordance with Claim 1, wherein the substantially continuous fibers are selected from the group consisting of spunbond, meltblown and combinations thereof.

17. A material in accordance with Claim 1, wherein the substantially continuous fibers comprise an adhesive.

18. A material in accordance with Claim 1, wherein the substantially continuous fibers are thermally bonded.

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19. A material in accordance with Claim 1, wherein the nonwoven web has a basis weight in a range of about 0.25 osy to about 50 osy.
20. A material in accordance with Claim 1, wherein the substantially continuous fibers are polymeric fibers.
21. A material in accordance with Claim 20, wherein the polymeric fibers are thermoplastic fibers.
22. A material in accordance with Claim 1, wherein the substantially continuous fibers are selected from the group consisting of homofilament fibers, bicomponent fibers, biconstituent fibers and combinations thereof.
23. A material in accordance with Claim 1, wherein a support structure is attached to at least one face of the nonwoven web.
24. A material in accordance with Claim 1, wherein the nonwoven web further comprises an absorbent.

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25. A method for producing a material having z-direction folds comprising:

conveying continuous fibers on a first moving surface from a first moving surface to a second moving surface, the second moving surface traveling at a slower speed than the first moving surface, resulting in formation of a material having a plurality of z-direction folds on both surfaces of the material.

26. The method for producing a material having z-direction folds according to claim 25 further comprising:

positioning the first moving surface and the second moving surface to form a nip therebetween.

27. A method in accordance with Claim 25 wherein the continuous fibers are selected from the group consisting of spunbond, meltblown, spunbond-meltblown-spunbond laminates, coform, spunbond-film-spunbond laminates, bicomponent spunbond, bicomponent meltblown, biconstituent spunbond, biconstituent meltblown, and combinations thereof.

28. A method in accordance with Claim 25, wherein the first moving surface is traveling in a range of about 1.25 to about 7 times faster than the second moving surface.

29. A method in accordance with Claim 25, wherein the first moving surface is a forming surface on which the fibers are formed.

30. A method in accordance with Claim 25 wherein the fibers are lightly bonded.

31. A method in accordance with Claim 25, wherein the nonwoven material is bonded by at least one of an adhesive bonding process and a thermal bonding process.

32. A method in accordance with Claim 25, wherein the first moving surface and the second moving surface are perforate.

33. A method in accordance with Claim 32, wherein the material is transferred from the first moving surface to the second moving surface using a controlled vacuum whereby the material is pulled in a direction of the second moving surface.

34. A method in accordance with Claim 33, wherein the material is transferred from the first moving surface to the second moving surface using a positive air pressure whereby the material is pushed in a direction of the second moving surface.

35. A method in accordance with Claim 25, wherein at least one additional material is applied to a face of the base material, forming a composite or laminate.

36. A method in accordance with Claim 25 wherein the first moving surface and second moving surface face opposing directions.

37. A method in accordance with Claim 36 wherein the first moving surface and second moving surface have no directly opposing faces to form a channel.

38. A method in accordance with Claim 25, wherein the continuous fibers comprise a plurality of thermoplastic fibers

39. A personal care absorbent article comprising:  
a nonwoven web comprising a plurality of substantially continuous fibers having a z-direction orientation and forming a plurality of ridges on both surfaces of the nonwoven web.

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plur:  
form:

A filtration material comprising: a network of substantially continuous fibers having a plurality of ridges on at least one surface of the fibers.